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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/467,818	12/20/1999	VIJITHA SENAKA KIRIDENA	199-0680	2860

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EXAMINER

MILLER, MARTIN E

ART UNIT	PAPER NUMBER
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2623

DATE MAILED: 09/04/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/467,818

Applicant(s)

KIRIDENA ET AL.

Examiner

Martin Miller

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 December 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other: _____

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed December 20 1999 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the foreign patent information referred to therein has not been considered. A partially initialed copy is included with this office action.

Claim Objections

2. It appears that the word "air" is missing from the end of claim 8 after the word "compressed". Appropriate correction is required.

Claims 18 state that they depend on "The method of claim 16", however, claim 16 is an apparatus claim. Claim 20 depends upon claim 18. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The display assembly limitation of claim 11 is nonsensical, it states, "a display assembly which selectively said cooperatively provide images". The examiner will interpret the limitation to mean a display assembly which displays the selected portions of said cooperatively provided images.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

6. Claims 1, 2 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Wada et al., (hereinafter Wada), US 6172601 B1.

As per claim 1, Wada teaches:

at least one image acquisition apparatus (video camera, col. 3, ll. 58-60) which is disposed upon a vehicle (vehicle body, col. 7, ll. 39-40) and which acquires images of the environment in which said vehicle resides (figures 2A-2D);

a video processing assembly which is coupled to said at least one image acquisition apparatus, which receives said acquired images, and which uses said acquired images to create a mosaic (stereoscopic) image of said environment (col. 3, ll. 60-67, fig. 1, element 24);

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a display which is coupled to said video processing assembly, which is disposed within said vehicle (fig. 1, element 3) , and which selectively (figure 1, element 24') displays at least one portion of said mosaic (col. 4, ll. 14-17); and

an image control assembly which selects said at least one portion (by changing viewpoint), thereby allowing said at least one portion of said mosaic to be selectively displayed by said display assembly (col. 7, ll. 4-12).

As per claim (2), Wada teaches:

image acquisition apparatus comprises a camera (col. 3, ll. 58-60).

As per claim (10), Wada teaches:

comprising an audio assembly which selectively generates certain audio signals (to indicate a possible collision with obstacle, col. 7, ll. 50-57) which describe said at least one portion of said mosaic.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

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invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wright et al., (hereinafter Wright), US 6161066 and Okude et al., (hereinafter Okude), US 6157342.

As per claim (17), Wright teaches:

providing a plurality of cameras (fig. 1, elements 33, 35, 36, and 38);

disposing said plurality of cameras upon said vehicle, effective to acquire said images (see fig. 1 for locations of cameras);

providing a display (fig. 1, element 18);

disposing said display within said vehicle, effective to selectively display at least a portion of said images (fig. 1, element 18, col. 5, ll. 29-34); Wright teaches using a touch pad to select images for display and control. Wright does not teach voice recognition. However, Okude teaches an automobile image display for driver navigation purposes. Okude teaches:

generating a voice command (col. 4, ll. 53-55);

and using said voice command to select said at least a portion of said images (col. 4, ll. 55-56).

It would have been obvious to one of ordinary skill in the art to simplify the image display functions of Wright by using the voice recognition control input features of the Okude automobile navigation display to allow for the driver to concentrate on monitoring his surrounding instead of being possibly distracted by having to interact with the system via a touch panel. One of ordinary skill would have been motivated to look at both patents because both pertain to providing stereoscopic image information to a driver.

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As per claim (19), Wright teaches:

wherein each of said cameras are substantially identical (see figure 1, elements 33, 35, 36, and 38, col. 5, ll. 29-46).

10. Claims 3-5 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wada as applied to claim 1 above, and further in view of Kiridena et al. (hereinafter Kiridena), US 6429789.

As per claim 3, Wada does not selectively monitor one attribute that causes a second portion of said mosaic to be displayed. However, Kiridena teaches:

wherein said vehicle has at least one attribute (col. 4, l. 59-col. 5, l. 3) and wherein said assembly selectively monitors said at least one attribute and, in response to said monitored attribute, generates a certain signal which is effective to cause a second portion (recalculate region of interest, col. 8, ll. 1-10) of said mosaic to be displayed by said display assembly (col. 6, ll. 60-65).

It would have been obvious to one of ordinary skill in the art to

As per claim (4), Kiridena teaches:

The vehicle data acquisition and display assembly of claim 1 wherein said vehicle is selectively maneuvered (direction change, steering, col. 8, l. 4) and wherein said assembly senses said maneuvering of said vehicle and, in response to said sensed maneuvering, causes a third portion (region of interest, col. 8, ll. 43-48) of said mosaic to be displayed by said display assembly.

As per claim (5), Kiridena teaches:

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The vehicle acquisition and display assembly of claim 4 further comprising a voice activated control assembly (microphone, col. 6, ll. 27 -35) which selectively receives at least one voice command and which selectively causes a fourth portion (region of interest) of said mosaic to be displayed ("created" region of interest, col. 6, l. 32-35) in response to said at least one voice command.

As per claim (15), Kiridena teaches:

comprising a voice recognition module (col. 6, ll. 27-35) which causes said first portion of said cooperatively provided images to be displayed by said display assembly in response to a receipt of a certain voice command (col. 6, ll. 60-65).

11. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wada and Wright.

As per claim (11), Wada teaches:

a plurality of cameras (col. 1, ll. 22-24) which are disposed upon said roof (fig. 2A) and which cooperatively provide images of the environment in which said vehicle resides (col. 1, ll. 25-30);

a display assembly which selectively said cooperatively provide images (col. 3, ll. 40-41); Wada does not teach changing the scene by using a touch sensitive display. However, Wright teaches:

a controller having a touch sensitive surface (MobileVu, col. 3, ll. 46-48) upon which an icon (obvious to use icons in a graphical control panel, col.. 3, ll. 56-57) is disposed,

Although Wright teaches changing camera images, Wright does not teach selecting another portion of an image to be viewed. However, Wada teaches this feature:

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said controller selecting a first portion (change of viewpoint, col. 4, ll. 14-16,) of said cooperatively provided images by use of said touch sensitive surface and causing said selected first portion of said cooperatively provided images to be displayed by said display assembly (col. 6, l. 66-col. 7, l. 12 and col. 8, ll. 20-23, figure 6).

It would have been obvious to one of ordinary skill in the art to use the touch screen input device of Wright to control the imaging devices to minimize the space requirements of the system given the constraints of having the system located in an automobile, which already suffers from space constraints particularly when the vehicle is used in a law enforcement environment.

As per claim (12), neither Wada nor Wright specifically teaches that the cameras have an imaging surface substantially coplanar with a portion the roof. However, many cameras have optics that reflects the incoming image at 90 degrees to the imaging surface. This is not a unique configuration for an image acquisition system and would merely be a design choice

12. Claims 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wada and Wright as applied to claim 12 above, and further in view of Kiridena.

As per claim (13), Wada teaches that the viewpoint can be changed to any arbitrary view point (for instance, fig. 6 is a relatively far view, while fig 2D is a close -up view). Therefore, Wada teaches:

wherein said cooperatively provided images include a first image which represents a first portion of the environment which is relatively far (fig. 6, "infinite point", col. 7, l. 6) from said vehicle and a second image which represents a second portion of said environment which is relatively close to said vehicle ("driver's position", col. 7, l. 6), said controller selecting said first

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image to be displayed upon said display assembly. Although Wada teaches changing viewpoint Wada does not teach a touch screen. Wright teaches a touch screen but Wright does not teach changing the displayed scene from a far view to a closeup view by touching a particular portion of the touch screen relative to a displayed icon. However, Kiridena teaches:

when said controller is touched at a point which is relatively far (col. 11, ll. 45-60) from said icon and selecting said second image to be displayed upon said display assembly when said controller is touched at a second point which is relatively close to said icon ("zoom-in", col. 12, ll. 30-33, 35-40, display formats changed based upon selective use of the data/command input device).

It would have been obvious to one of ordinary skill in the art to use the icon representations of Kiridena in the vehicle imaging systems of Wada and Wright to provide graphical control panel using data representations familiar to the user, such as icons. It also allows the user to dynamically configuring the display to provide relevant information in a format most easily interpreted by the user. This representation also allows for consistent representation of vehicles because the same icon is displayed for all types of vehicles, thereby, minimizing user confusion from information overloading (Kiridena, col. 2, ll. 23-30)

As per claim (14), Kiridena teaches:

wherein said icon comprises an image of a vehicle (col. 11, ll. 29-33) .

As per claim (16), Wada teaches:

comprising an audio generator which selectively generates certain sounds which are based upon said certain portion of said cooperatively provided images (col. 7, ll. 20-28).

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13. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wada, Wright and Kiridena as applied to claim 16 above, and further in view of Hassinger, US 3915385.

Wada, Wright and Kiridena do not specifically teach a way to keep the camera lenses clean. However, it would have been obvious to design such a system because the environment in which the automobile optical system is subjected to (snow and grime in the winter, if in the Northeast, rain, if in the Northwest or dust if in the Southwest) is harsh and to provide undistorted image data the camera lenses must be free of dirt, etc.

Hassinger teaches:

providing a source of air (figure 4, element 18);

disposing said source of air within said vehicle (fig. 1, element 18);

Hassinger then uses a switch (col. 2, ll. 47-48) instead of a voice command causing air to be applied to at least one of said plurality of cameras by use of said generated second voice command (col. 2, l. 65-col. 3, l. 4). Kiridena teaches using a voice command to control the system col. 6, ll. 27-29.

It would have been obvious to one of ordinary skill in the art to use the lens cleaning system of Hassinger with the camera system of Wada, Wright and Kiridena because Hassinger is familiar with keeping lenses on automobiles clean. Additionally such systems are already part of an automobile system, it would have been obvious to one of ordinary skill in the art to use already designed off-the-shelf lens cleaning systems to provide unobstructed image acquisition.

As per claim (20), Hassinger teaches:

providing a cleansing agent (col. 6, ll. 23-32);

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heating said cleansing agent; mixing said air with said heated cleansing agent; (see figure 1, element 18, which shows cleansing agent liquid located in the engine compartment of an automobile). Hassinger by locating the cleansing agent liquid in the engine compartment insures that the liquid will be warmed by the heat energy created by the engine. It would have been obvious to one of ordinary skill in the art to use the engine heat to elevate the temperature of the cleansing agent, at least, to prevent freezing of the cleansing solution in the line.

applying said mixture of said air and said heated cleaning agent to said at least one of said plurality of cameras (fig. 4, element 18, col. 2, ll. 54-60, air and fluid are mixed in tank 18).

Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wada and Kiridena as applied to claim 5 above, and further in view of Hassinger, US 3915385.

Wada and Kiridena do not specifically teach a way to keep the camera lenses clean. However, it would have been obvious to design such a system because the environment in which the automobile optical system is subjected to (snow and grime in the winter, if in the Northeast, rain, if in the Northwest or dust if in the Southwest) is harsh and to provide undistorted image data the camera lenses must be free of dirt, etc.

Wada clearly teaches:

at least one lens cover (a lens cover is clearly a part of any camera, Wada, col. 1, ll. 25-30 or col. 4, l. 28);

Hassinger teaches:

a lens cleaning assembly (figure 1, element 16) which selectively cleans said at least one lens cover (figure 1, element 14).

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It would have been obvious to one of ordinary skill in the art to use the lens cleaning system of Hassinger with the camera system of Wada and Kiridena because Hassinger is familiar with keeping lenses on automobiles clean. Additionally such systems are already part of an automobile system, it would have been obvious to one of ordinary skill in the art to use already designed off-the-shelf lens cleaning systems to provide unobstructed image acquisition.

As per claim 7, Hassinger teaches:

wherein said lens cleaning assembly includes a source of compressed air (fig. 1, element 26); and a valve which selectively allows compressed air to be applied to said at least one lens cover (fig. 1, element 28).

As per claim 8, Hassinger teaches:

wherein said lens cleaning assembly further includes a source of a cleansing agent (fig. 4, element 18, col. 6, ll. 23-32) which is selectively and concomitantly mixed (air and fluid are mixed in tank 18) with said applied compressed [air].

As per claim 9, Hassinger teaches:

wherein said cleaning agent is warmed before it is mixed with said applied compressed air (see figure 1, element 18, which shows cleansing agent liquid located in the engine compartment of an automobile). Hassinger by locating the cleansing agent liquid in the engine compartment insures that the liquid will be warmed by the heat energy created by the engine. It would have been obvious to one of ordinary skill in the art to use the engine heat to elevate the temperature of the cleansing agent, at least, to prevent freezing of the cleansing solution in the line.

Conclusion

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14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following U.S. patent(s) refer(s) to cleaning lenses or windows on vehicles: Ouellette et al., 6281,649, Long, 5546630, Cowan, 5140719.

The following U.S. patent(s) refer(s) to vehicle image enhancement or collection: Schofield et al., 5949331, Lee, 5680123 and Reid, 5027104.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin Miller whose telephone number is (703) 306-9134. The examiner can normally be reached on Monday-Friday, Maxi-flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on (703) 308-6604. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

mem
August 23, 2002

A handwritten signature in black ink, consisting of a large, stylized capital 'P' followed by a vertical line and a small flourish at the bottom.